What is claimed is :

1. A polypeptide consisting of an amino acid sequence of following (a) or (b):

(a) an amino acid sequence referred to as amino acid numbers from 1 to 291 shown in SEQ ID NO: 1 in the sequence list,

(b) an amino acid sequence in which a part of said amino acid sequence (a) is deleted or another amino acid sequence is added to said amino acid sequence (a) or a part of amino acid sequence (a) is substituted with another amino acid sequence, the amino acid sequence (b) being encoded by a gene induced by high-temperature stress and derived from barley.

2. A polypeptide consisting of an amino acid sequence exhibiting at least 70% of homology with an amino acid sequence referred to as amino acid numbers from 1 to 291 shown in SEQ ID NO: 1 in the sequence list.

3. A gene encoding the polypeptide according to claim 1.

4. A gene encoding the polypeptide according to claim 2.

5. A gene consisting of a base sequence of following (c), (d) or (e):

(c) a base sequence referred to as base numbers from 1 to 1,089 shown in SEQ ID NO: 2 in the sequence list,

(d) a base sequence in which a part of said base sequence (c) is deleted or another base sequence is added to said base sequence (c) or a part of said base sequence (c) is substituted with another base sequence, the base sequence (d) being induced by high-temperature stress and derived from barley,

(e) a base sequence that hybridizes with said base sequence (c) under stringent condition, the base sequence (e) being induced by high-temperature stress and derived from barely.

6. A gene consisting of a base sequence exhibiting at least 70% of homology with a base sequence referred to as base numbers from 1 to 1,089 shown in SEQ ID NO: 2 in the sequence list.

7. A method to render resistance to high temperature stress to a plant, the method comprising incorporating the gene into said plant according to claim 3.

8. A method to render resistance to high temperature stress to a plant, the method comprising incorporating the gene into said plant according to claim 4.

9. A method to render resistance to high temperature stress to a plant, the method comprising incorporating the gene into said plant according to claim 5.

10. A method to render resistance to high temperature stress to a plant, the method comprising incorporating the gene into said plant according to claim 6.

11. A transgenic plant exhibiting resistance to high temperature stress, produced by incorporation of the gene according to claim 3 into a plant.

12. A transgenic plant exhibiting resistance to high temperature stress, produced by incorporation of the gene according to claim 4 into a plant.

13. A transgenic plant exhibiting resistance to high temperature stress, produced by incorporation of the gene according to claim 5 into a plant.

14. A transgenic plant exhibiting resistance to high temperature stress, produced by incorporation of the gene according to claim 6 into a plant.

15. The transgenic plant according to claim 11, wherein said plant is *Arabidopsis thaliana*.

16. The transgenic plant according to claim 12, wherein said plant is *Arabidopsis thaliana*.

17. The transgenic plant according to claim 13, wherein said plant is *Arabidopsis thaliana*.

18. The transgenic plant according to claim 14, wherein said plant is *Arabidopsis thaliana*.